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TITLE: AQUEOUS INK COMPOSITION  
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ABSTRACT:

PROBLEM TO BE SOLVED: To obtain an aqueous ink composition in which the agglomeration of a pigment is prevented and which does not exhibit the decrease in density of printed letters by dispersing, in an aqueous medium, a surface-modified pigment dispersible and/or dissolvable in water in the absence of a dispersant and by adjusting the concentration of a free polyvalent cation in the ink to a specified value or lower.

SOLUTION: The concentration of the free polyvalent cation in the ink is adjusted to 100 ppm or lower. Calcium, magnesium, and iron ions, etc., are listed as the polyvalent cation. Preferable pigments to be surface-modified are carbon black and organic pigments. Especially preferably, the surface-modified pigment is prepared by oxidizing carbon black or an organic pigment with a halogenic acid compound (e.g. sodium or calcium hypochlorite). The cocentration of the free polyvalent cation in the ink can be decreased preferably by purifying a dispersion containing the surface-modified pigment oxidized and dispersed therein by reverse osmosis, ultrafiltration, electrodialysis, or the like and then preparing the ink.

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